

CLAIMS

1. A high-strength austenitic stainless steel strip excellent in flatness of shape with Vickers hardness of 400 or more, which has the composition consisting of C up to 0.20 mass %, Si up to 4.0 mass %, Mn up to 5.0 mass %, 4.0-12.0 mass % Ni, 12.0-20.0 mass % Cr, Mo up to 5.0 mass %, N up to 0.15 mass % and the balance being Fe except inevitable impurities under the condition that a value Md(N) defined by the formula (1) is in a range of 0-125, and a dual-phase structure of austenite and martensite which involves reversion austenitic phase at a ratio more than 3 vol.%.
Md(N) = 580 - 520C - 2Si - 16Mn - 16Cr - 23Ni - 26Cu - 300N - 10Mo ····· (1)
2. The austenitic stainless steel strip defined in Claim 1, which further contains at least one or more of Cu up to 3.0 mass %, Ti up to 0.5 mass %, Nb up to 0.50 mass %, Al up to 0.2 mass %, B up to 0.015 mass %, REM (rare earth metals) up to 0.2 mass %, Y up to 0.2 mass %, Ca up to 0.1 mass % and Mg up to 0.10 mass %.
3. A method of manufacturing a high-strength austenitic stainless steel strip excellent in flatness of shape with Vickers hardness of 400 or more, which comprises the steps of:
- providing an austenitic stainless steel strip having compositions consisting of C up to 0.20 mass %, Si up to 4.0 mass %, Mn up to 5.0 mass %, 4.0-12.0 mass % Ni, 12.0-20.0 mass % Cr, Mo up to 5.0 mass %, N up to 0.15 mass %, optionally at least one or more of Cu up to 3.0 mass %, Ti up to 0.5 mass %, Nb up to 0.50 mass %, Al up to 0.2 mass %, B up to 0.015 mass %, REM (rare earth metals) up to 0.2 mass %, Y up to 0.2 mass %, Ca up to 0.1 mass % and Mg up to 0.10 mass %, and the balance being Fe except inevitable impurities under the condition that a value Md(N) defined by the formula (1) is in a range of 0-125;
- solution-heating said austenitic stainless steel strip;
- cold-rolling said austenitic stainless steel strip to generate a deformation-induced martensite phase; and

